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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,700	08/10/2001	Takefumi Sawada	381KA/50302	4247

7590 02/19/2004

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EXAMINER
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SAN MARTIN, EDGARDO

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application N .

09/925,700

Applicant(s)

SAWADA ET AL.

Examiner

Edgardo San Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 13-23 is/are rejected.
- 7) ☒ Claim(s) 2-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 13 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada et al. (JP 2000134976 A) in view of Kaneko et al. (US 5,994,870).

With respect to Claims 1, 15, 22 and 23, Nakada et al. teach a motor control apparatus for controlling a voltage applied to an alternating current (AC) motor using a PWM signal, comprising magnetic position detecting means; and fault detecting means for detecting a fault in an detected magnetic pole position of the AC motor (Fig.1; Abstract), but fail to disclose the magnetic pole position being estimated by detecting a current of the AC motor.

On the other hand, Kaneko et al. teach a synchronous motor controller comprising a magnetic position estimating means (Fig.1, Item 8a) for detecting a current of the motor to estimate a magnetic pole position of motor (Col.6, Lines 26 - 35).

It would have been obvious to a person with ordinary skill in the art to employ the Kaneko et al. magnetic position estimating means as the Nakada et al. magnetic position detector because the magnetic position estimating means would reduce costs,

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would simplify the circuit assembly and would increase the reliability of the system by employing less equipment, diminishing the amount of extra equipment that could malfunction at some point in time.

With respect to Claim 13, Nakada et al. teach wherein the fault detecting means shuts down an associated system when the fault detecting means detects a fault, the fault including oscillation and inversion of an estimated magnetic pole position (Abstract).

With respect to Claim 14, Kaneko et al. teach wherein a polarity discriminating means corrects the polarity to continue a control when a fault detecting means detects a fault (Col.11, Line 47 – Col.13, Line 5).

With respect to Claims 15 and 23, Kaneko et al. teach an electric vehicle equipped with a motor control apparatus that controls the motor based on a detected pole position (Fig.1; Col.2, Line 38 – Col.3, Line 38).

With respect to Claims 16 and 19, Kaneko et al. teach wherein the magnetic position estimating means is operative to estimate the magnetic pole positions without direct detection of the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 17 and 20, Kaneko et al. teach wherein the magnetic position estimating means utilizes calculations in lieu of detection to estimate the magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

With respect to Claims 18 and 21, Kaneko et al. teach wherein the voltage is controlled on the absence of a detector to sense magnetic pole position (Fig.1; Col.6, Lines 26 - 35).

***Allowable Subject Matter***

2. Claims 2 – 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

3. Applicant's arguments filed on January 12, 2004 have been fully considered but they are not persuasive. The Examiner considers that the obvious combination of the patents to Nakada et al. and Kaneko et al. teach the claimed subject matter as discussed above. In response to Applicant's piecemeal analysis of the references, it has been held that one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references. In re Keller, 208 USPQ 871 (CCPA 1981). It is clear to the Examiner that by obviously replacing the Nakada et al. pole position detecting means with the Kaneko et al. pole position estimating means, as discussed above, the resultant configuration is described by the claimed subject matter.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (571) 272-2074. The examiner can normally be reached during 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (571) 272-2071. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872 - 9306 for regular communications and (703) 872 - 9306 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Edgardo San Martín  
Patent Examiner  
Art Unit 2837  
Class 318  
February 11, 2004



ROBERT NAPPI  
SUPERVISORY PATENT EXAMINER